

Ushikubo fails to disclose or suggest each and every feature recited in the rejected claims. For example, Ushikubo fails to disclose or suggest a method of manufacturing a ferroelectric capacitor comprising, forming a lower electrode on a body, forming a ferroelectric film on the lower electrode by crystallizing a raw material including a complex oxide, and forming an upper electrode on the ferroelectric film, wherein the crystallization includes performing a first heat treatment in a first condition in which a predetermined pressure and a predetermined temperature are applied, maintaining a second condition, in which a pressure and a temperature lower than the pressure and the temperature in the first condition are applied, after the heat treatment in the first condition, wherein the heat treatment in the first condition and the maintaining the second condition are repeated, as recited in original claim 8.

Ushikubo relates to a method for producing a ferroelectric film element to be used for memory elements, pyroelectric sensor elements, piezoelectric elements and the like (col. 1, lines 10-13). As shown in Fig. 2, Ushikubo discloses a two-step annealing process. During the first annealing, heat treatment is performed at 600°C for 30 minutes in an atmosphere of oxygen under atmospheric pressure. During the first annealing, the ferroelectric film is partly crystallized (col. 7, lines 29-39). An upper electrode is then formed and a second annealing is conducted in a vacuum (10 Torr atmosphere of oxygen). The second annealing is for the purpose of a complete crystallization of the ferroelectric film (col. 7, lines 49-53).

Accordingly, Ushikubo fails to disclose or suggest repeating the first and second conditions wherein crystallization occurs, as recited in the rejected claims. Moreover, it is admitted in the Office Action that Ushikubo does not explicitly teach that the crystallization steps are repeated. It is alleged however that it is "common in the semiconductor processing to run fabrication processes repeatedly. The process of Ushikubo may be carried out repeatedly to form substantially identical ferroelectric capacitors on multiple wafers.

Therefore, the limitation of repeating the heat treatment and maintaining steps as recited in claim 8 is taken to be obvious over the prior art."

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation either in the reference or in the knowledge generally available to one of ordinary skill in the art to modify the reference. Second, there must be reasonable expectation of success. Finally, the prior art reference must teach or suggest all of the claim limitations.

There is no motivation or suggestion in Ushikubo to modify its method as alleged in the Office Action. As stated at MPEP §2143, the teaching or suggestion to make the claim combination and the reasonable expectation of success must both be found in the prior art and not based on Applicants' disclosure. As Ushikubo clearly states that complete crystallization of the ferroelectric film occurs during the second annealing process, there is no suggestion or motivation to repeat the heat treatments. Because Ushikubo specifically states that complete crystallization has occurred during the second annealing, there can be no motivation or suggestion in the reference to then repeat the process without relying on Applicants' claims as a motivation to do so. This line of reasoning imports hindsight into the obviousness determination by using the invention as a road map and therefore fails to provide any motivation or suggestion before the invention itself to make such a combination.

By alleging that it is "common in semiconductor processing to run fabrication processes repeatedly" it appears that the Office Action is alleging that bulk manufacturing or "assembly line" processing is well known. However, this line of reasoning does not provide proper motivation or suggestion to repeat a crystallization step during the manufacturing of a ferroelectric capacitor. As there is no motivation or suggestion to modify Ushikubo to repeat the first and second conditions that are performed during the crystallization step, and because

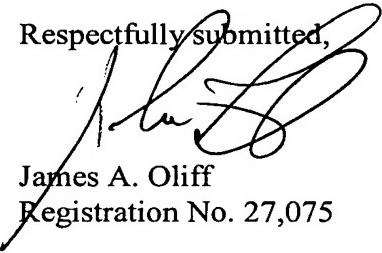
it is explicitly admitted that Ushikubo fails to disclose such a feature, withdrawal of the rejection of claims 8, 13 and 15 under 35 U.S.C. §103(a) is respectfully requested.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-18 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,


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